



THE SOURCE



NEWSLETTER OF THE NHDES DRINKING WATER SOURCE PROTECTION PROGRAM

ON THE WEB AT WWW.DES.NH.GOV/DWSPP

WINTER 2005

New MtBE Data Includes Some Surprises

Recent work by the U.S. Geological Survey (USGS) finds that the gasoline additive MtBE is present in many public and private water supply wells. The results of the USGS study, which randomly sampled 225 water supply wells in Rockingham County (public and private sources equally) during 2003, point to two conclusions. First, greater monitoring of source waters may be appropriate. Second, the assumption that deeper bedrock wells provide “built in” protection from contamination needs to be reexamined.

Among the wells tested in the study, MtBE was found at or above the 0.2 ug/L detection level in 40 percent of public wells and 21 percent of private wells. Community systems had the highest

detection rate (53 percent) in comparison with transient non-community (26 percent) and non-transient non-community (41 percent). New Hampshire’s health-based maximum contaminant level for MtBE is 13 ug/L; of the 225 wells in the study, four tested above that level.

Perhaps the most unexpected finding was a significant correlation between well depth and MtBE levels for public water supply wells. This is contrary to the belief that deeper bedrock wells would be more protected than wells in shallow unconsolidated aquifers. Possible reasons for higher MtBE levels in deeper bedrock wells include limited dilution of MtBE captured by deep bedrock wells or by leakage from contaminated shallow groundwa-

ter near surface fractures or along well casings.

The findings of the Rockingham County study raise questions regarding how to evaluate and then manage risks to water supplies from MtBE. Some of these questions will be addressed by the State-wide Methyl Tertiary Butyl Ether Risk Analysis, currently underway.

This study will have two phases: (1) identify MtBE risk factors and assess risks statewide, and (2) develop risk reduction recommendations. Phase I will examine existing information and evaluate trends in MtBE contamination. Phase I will also include a pilot study conducted on a subset of public water supplies (PWSs) that will evaluate

a broad spectrum of potential risk factors (i.e. land use, geology, storm water drainage) that may result in MtBE contamination at a PWS at concentrations of concern. The project will then develop and apply a GIS-based MtBE risk model based on the pilot study results that can evaluate

each PWS in New Hampshire.

Phase II will develop a series of recommendations for reducing MtBE pollution risks at PWSs. Results from this project, being carried out by DES contractor Weston Solutions, should be available in the spring of 2005.

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Northeast Rural Water Association (NeRWA) and DES are working together to address possible sources of MtBE at community water systems in New Hampshire. If your system’s last volatile organic compound sample had an MtBE detection of 4 ug/L or greater, NeRWA may be contacting you to schedule a visit to discuss possible sources of MtBE contamination. Questions about this effort should be directed to Jack Shields, NeRWA, at 1-800-556-3792 x320.



Spotlight on ... Jackson Water Precinct



The relatively small Ellis River watershed contains some of New Hampshire's most picturesque natural features: Mount Washington's Nelson Crag, Pinkham Notch, and Glen Ellis Falls. From Jackson Village to Pinkham Notch, the river follows N.H. Route 16. The watershed is a popular destination for sightseers, hikers, cross-country skiers, and golfers. The Ellis River watershed is also the main water supply source for Jackson Water Precinct (JWP), which serves 500 year-round residents in and around Jackson Village. JWP also serves a number of hotels, inns, bed-and-breakfasts, and other businesses in the village, which are heavily dependent on the natural resource-based tourist trade. As a result, the system serves thousands of visitors per day during tourist season.

The population of Jackson grew 23 percent during the 1990s. Due to concerns over the potential impact of further development on the village's water supply, JWP contracted with North Country Council in 2002 to draft a watershed protection ordinance with provisions similar to DES's *Model Rule for the Protection of Water Supply Watersheds*. A public hearing on the proposed ordinance revealed that the public would not support the proposal in the absence of a better understanding of threats facing the river. JWP then applied for and received a Local Source Water Protection Grant from DES to prepare a watershed management plan. JWP again contracted with North Country Council, which formed a steering committee and subcontracted with Watershed to Wildlife, Inc. to help prepare a plan. The planning process included two public meetings, an additional steering committee meeting, field work, and mapping analysis. Early meetings identified community concerns and reviewed maps and other background information gathered by the contractor. Late in the project, an extensively advertised public meeting involved participants in prioritizing a preliminary set of recommendations.

A key natural characteristic of the watershed – and a critical concern for the river's future – is the area's steepness; the Ellis River falls 4,218 feet over less than 17 miles, and the average side slope of the watershed is 16 percent. On the posi-

tive side, over 95 percent of the watershed is forested and 76 percent is in the White Mountain National Forest. On the negative side, North Country Council's build-out analysis suggests that the number of building units in the watershed could increase as much as 175 percent under current zoning. However, if limited to areas with slopes of less than 25 percent, the number of new dwelling units would be reduced by three-quarters.

The final watershed plan prioritizes action items based on input from the steering committee and the broader public. High-priority items include protecting and expanding riparian buffers, creating detention ponds along Route 16, and adopting a Minimum Impact Development Ordinance which would address development on steep slopes in the watershed. JWP superintendent Richard Johnson plans to begin implementation of the source protection program with public education events in the spring of 2005, in order to build public support for implementation of the plan's other recommendations.

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New Resources of Interest

Subwatershed Restoration Manuals Available

The Center for Watershed Protection (CWP) is publishing a series of 11 manuals, known as the “Urban Subwatershed Restoration Manual Series.” The manuals will be of interest to water suppliers, watershed groups, municipal staff, environmental consultants, and other users. The series introduces frameworks for urban watershed restoration, provides techniques for assessing urban watersheds, and provides a review of watershed restoration techniques. The manuals can be downloaded at www.cwp.org.



Forest Protection & Drinking Water Quality

The World Bank and the World Wildlife Fund (WWF) Forest Alliance have published a report underscoring the value of forests in water supply protection. *Running Pure: the Importance of Forest Protected Areas to Drinking Water* shows that more than one third of the world's biggest cities rely on partly protected forests for most of their drinking water. Forests improve the water quality by filtering pollutants and by doing so they provide monetary savings for the water systems because extensive treatment is not required. To download the report go to www.forest-alliance.org.

NEIWPCC Publishes Guide for Municipal Officials

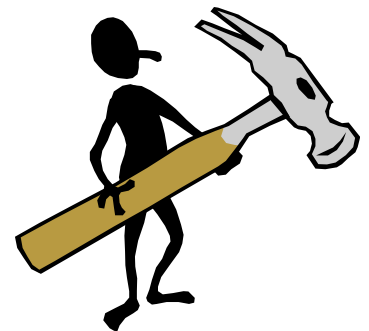
The New England Interstate Water Pollution Control Commission (NEIWPCC) has published a guide for municipal officials titled *Protecting Drinking Water Sources in Your Community: Tools for Municipal Officials*. The 52-page guide focuses on land use strategies, septic systems, underground storage tanks, hazardous materials, and stormwater management. To obtain a copy of the guide and related materials please contact Ben Gauthier at (603) 271-0657.

DWSPP and OEP Welcome New Staff

Pierce Rigrod has joined the staff of the Drinking Water Source Protection Program (DWSPP) and is providing technical assistance with local source water protection programs. Pierce has a master's degree in planning and currently is overseeing groundwater reclassifications, assisting on the revisions to surface water rules and tracking progress for a number of source water grants. He will also be available to work with communities to establish and implement source water protection goals. Pierce can be reached at (603) 271-0688 or prigrod@des.state.nh.us. Pierce has worked with the Department for almost five years in the Waste Management Division in the Pollution Prevention Program. Prior to that he worked at the Nashua Regional Planning Commission as a circuit rider and GIS specialist.

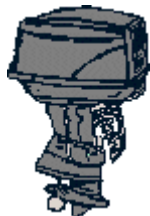
Ben Gauthier has also joined the DWSPP and is assisting with the Chemical Monitoring Waiver Program and the Groundwater Discharge Permitting and Regulation Program. Ben can be reached at (603) 271-0657 or bgauthier@des.state.nh.us. Ben is a recent college graduate and has been an intern with the Department for the last three summers in the Dam Bureau.

The Office of Energy and Planning (OEP) has also filled a much-needed Water Resources Planner position. June Hammond-Rowan, previously the town planner for Plymouth, is now the Water Resources Planner at OEP. The position involves working with communities on a wide range of water resource protection topics, particularly floodplain issues. June can be reached at (603) 271-2155 or june.hammondrowan@nh.gov.



Full Steam Ahead with Four-Stroke Engines!

Lake Tahoe, the largest alpine lake in North America with a 105,000-acre surface and a depth of 1,645 feet, has seen a “dramatic reduction in levels of burned and unburned gasoline products in its water since two-stroke engines were banned in 1999.” According to Judy Whitney, a hydrogeologist with the Tahoe Regional Planning Agency, “levels of gasoline products in the lake have declined 80 to 90 percent” since the ban was instituted. DES has several useful links to find out more about the use of four stroke engines at www.des.nh.gov/ard/marine_engines.htm or you can contact Jackie Colburn at (603) 271-2959.



Source Assessments Return!

DES staff finished preparing and distributing Source Assessment Reports for approximately 3,000 public water supply sources in early 2003. These reports provide valuable information about the vulnerability of wells and intakes from a variety of land uses. However, since January 1, 2002, the cutoff date for sources to be included in the program, approximately 100 new community wells have come on line in New Hampshire. Now, with help from U.S. EPA hydrologist Douglas Heath, DES plans to complete Source Assessment Reports for those new wells. Heath is U.S. EPA Region 1's lead staff person for New Hampshire's Drinking Water Source Protection Program. Since 1996, he has prepared over 100 Wellhead Protection Area Delineations for New Hampshire wells, and assisted DES with the development and implementation of its Source Assessment Program. Owners of community systems with new wells can expect to receive Source Assessment Reports in early 2005.

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Durham Reclassifies Groundwater

On November 15, 2004, DES Commissioner Michael Nolin approved the Town of Durham's request to reclassify groundwater in its wellhead protection area and in the Spruce Hole Aquifer in Durham and Lee. The areas will now be classified GAA and GA1, respectively. By obtaining this reclassification the Town of Durham now has the authority to enforce the state's Best Management Practice Rule, Env-Ws 421. In addition, six high-risk land uses are prohibited and/or require monitoring in the wellhead protection area. Durham joins Plymouth, Jaffrey, Pembroke, Stratham, Salem, Raymond, and the Village District of Eastman in successfully completing the reclassification process. For more information on reclassification, please visit www.des.nh.gov/dwspp/reclass.htm or contact Paul Susca at (603) 271-7061 or psusca@des.state.nh.us.

Project WET On The Ice

The Manchester Monarchs and Public Service of New Hampshire (PSNH) team up every hockey season to support organizations that make a difference in New Hampshire. For this season they have chosen to support Project WET (Water Education for Teachers). Everytime the Monarchs score on a power play, PSNH will make a donation to New Hampshire's Project WET.

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